CLAIMS

1-47. (Cancelled)

48. (Previously Presented) A fluid treatment apparatus comprising:

an ultraviolet light source including

an ultraviolet lamp;

a microwave energy source for exciting said ultraviolet lamp; and

a waveguide for guiding microwave energy originating from said microwave energy source to the ultraviolet lamp, said waveguide being UV transparent and wholly surrounding the ultraviolet lamp, wherein the waveguide is provided with a blocking end flange; and

a housing for said ultraviolet light source, said housing having an inlet and an outlet, the housing shaped to guide flow of a fluid to be treated from the inlet, past the waveguide to the outlet.

49. (Previously Presented) The fluid treatment apparatus according to claim 48, wherein the ultraviolet lamp has no electrode.

50. (Previously Presented) The fluid treatment apparatus according to claim 49, further comprising an element or mixture of elements in vapor form.

51. (Previously Presented) The fluid treatment apparatus according to claim 50, wherein said element or mixture of elements comprises mercury, sodium, sulphur or mixtures of inert gases with mercury compounds.

52. (Previously Presented) The fluid treatment apparatus according to claim 49 having a dominant wavelength of 254nm.

53. (Previously Presented) The fluid treatment apparatus according to claim 48, wherein the waveguide controls the flow of microwave energy.

54. (Previously Presented) The fluid treatment apparatus according to claim 48, wherein the waveguide blocks the flow of microwave energy.

55. (Previously Presented) The fluid treatment apparatus according to claim 48, wherein the waveguide comprises quartz or a UV-transparent plastic material.

56. (Previously Presented) The fluid treatment apparatus according to claim 48, wherein the waveguide comprises a conducting material.

57. (Previously Presented) The fluid treatment apparatus according to claim 56, wherein the waveguide comprises a conducting mesh.

58. (Previously Presented) The fluid treatment apparatus according to claim 57, wherein the conducting mesh comprises a material selected from the group consisting of copper, aluminum and stainless steel.

59. (Previously Presented) The fluid treatment apparatus according to claim 48, wherein the ultraviolet lamp has an elongated form.

60. (Previously Presented) The fluid treatment apparatus according to claim 48, wherein the transparent waveguide has a cylindrical or rectangular form.

61. (Previously Presented) The fluid treatment apparatus according to claim 48, wherein the ultraviolet lamp has an operating temperature of less than 70°C.

62. (Previously Presented) The fluid treatment apparatus according to claim 48, wherein the microwave energy source comprises a magnetron.

63. (Previously Presented) The fluid treatment apparatus according to claim 48, further comprising a pathguide to guide the microwave energy from the microwave energy source to the ultraviolet lamp.

64. (Previously Presented) The fluid treatment apparatus according to claim 63, wherein the pathguide defines an essentially linear path.

65. (Previously Presented) The fluid treatment apparatus according to claim 63, wherein the pathguide defines a non-linear path.

66-67. (Cancelled)

68. (Previously Presented) The fluid treatment apparatus according to claim 65, wherein said fluid comprises water or air.

69. (Previously Presented) The fluid treatment apparatus according to claim 48, further comprising a pump for pumping the fluid from the inlet, past the waveguide to the outlet.

70. (Previously Presented) The fluid treatment apparatus according to claim 48, wherein the ultraviolet light source is for sterilising the fluid.

71. (Previously Presented) The ultraviolet light source according to claim 70, wherein the fluid is selected from the group consisting of water for human consumption; waste water; sewage; and air.

72-80. (Cancelled)

81. (Previously presented) The fluid treatment apparatus according to claim 48, wherein the waveguide comprises a quartz or a UV-transparent plastic

material and has a conducting mesh provided inner to said quartz or UV-transparent plastic material.

82. (Previously presented) The fluid treatment apparatus according to claim 81, wherein said conducting mesh is provided to an inner surface of the quartz or UV-transparent plastic material.

83. (Previously presented) The fluid treatment apparatus according to claim 82, wherein the conducting mesh comprises a material selected from the group consisting of copper, aluminum and stainless steel.

84. (Previously presented) The fluid treatment apparatus according to claim 81, wherein the conducting mesh comprises a material selected from the group consisting of copper, aluminum and stainless steel.

85. (Previously presented) A fluid treatment apparatus comprising

(i) an ultraviolet light source comprising

an ultraviolet lamp;

a microwave energy source for exciting said ultraviolet lamp; and

a waveguide for guiding microwave energy originating from said microwave energy source to the ultraviolet lamp, said waveguide being UV transparent and wholly surrounding the ultraviolet lamp; and

(ii) a housing for said ultraviolet light source, said housing having an inlet and an outlet, the housing shaped to guide flow of a fluid to be treated from the inlet, past the waveguide to the outlet.

86. (Previously presented) The fluid treatment apparatus according to claim 85, wherein the waveguide comprises a quartz or a UV-transparent plastic material and has a conducting mesh provided inner to said quartz or UV-transparent plastic material.

87. (Previously presented) The fluid treatment apparatus according to claim 86, wherein said conducting mesh is provided to an inner surface of the quartz or UV-transparent plastic material.

88. (Previously presented) The fluid treatment apparatus according to claim 87, wherein the conducting mesh comprises a material selected from the group consisting of copper, aluminum and stainless steel.

89. (Previously presented) The fluid treatment apparatus according to claim 86, wherein the conducting mesh comprises a material selected from the group consisting of copper, aluminum and stainless steel.